

What is claimed is:

- 1 1. A method for determining the position of a game ball during an athletic competition
2 on a playing field having defined boundaries, comprising the steps of:
3 transmitting a first signal from the game ball; and
4 receiving and analyzing said first signal, to determine the position of the game ball.
- 1 2. The method of Claim 1 further comprising the step of:
2 communicating the game ball's position to a game official.
- 1 3. The method of Claim 2 further comprising the step of:
2 displaying the game ball's position on a visual display.
- 1 4. The method of Claim 2 further comprising the steps of:
2 selectively transmitting a second signal;
3 receiving said second signal;
4 recording the game ball's position in response to said second signal; and
5 transmitting a third signal to communicate the game ball's position to a game official.
- 1 5. The method of Claim 4 further comprising the step of:
2 displaying the game ball's position on a visual display.
- 1 6. The method of Claim 4 further comprising the steps of:
2 comparing the game ball's position, as determined by said first signal, to the position
3 recorded in response to said second signal; and
4 providing the game official directions to move the game ball to a location described
5 by the position recorded in response to said second signal.
- 1 7. The method of Claim 6 wherein providing directions to said game official uses
2 audible signals.

1 8. The method of Claim 6 wherein providing directions to said game official uses visual
2 signals.

1 9. The method of Claim 1 further comprising the steps of:
2 determining if the game ball has crossed a boundary of the playing field; and
3 communicating an out of boundary alert to a game official.

1 10. The method of Claim 9 wherein communicating an out of boundary alert to said game
2 official uses audible signals.

1 11. The method of Claim 9 wherein communicating an out of boundary alert to said game
2 official uses visual signals.

1 12. A method of determining the position of a game ball during an athletic competition on
2 a playing field comprising the steps of:

3 transmitting a signal from the game ball;
4 receiving and analyzing said signal, using a microprocessor, to determine the position
5 of said game ball; and
6 communicating the game ball's position to a game official.

1 13. A method of determining the position of a game ball during an athletic competition on
2 a playing field comprising the steps of:

3 transmitting a signal from the game ball;
4 receiving and analyzing said signal, using a microprocessor, to determine the position
5 of said game ball;
6 continuously recording the game ball's position;
7 attaching and storing a time stamp to the recorded position of said game ball; and
8 providing the game ball's position for a selected time in response to a query.

- 1 14. The method of Claim 13 further comprising the step of:
2 graphically displaying the game ball's position at a remote terminal.
- 1 15. The method of Claim 14 wherein the game ball's position is graphically displayed at a
2 remote terminal located with a game official.
- 1 16. A method of determining the position of a game ball during an athletic competition on
2 a playing field comprising the steps of:
3 transmitting a first signal from a player carrying the game ball;
4 receiving and analyzing said first signal, to determine the position information of the
5 game ball; and
6 communicating the game ball's position to a game official.
- 1 17. A system for determining the position of a game ball during an athletic competition
2 on a playing surface having defined boundaries, comprising:
3 a first transmitter positioned in the game ball, for transmitting a first signal;
4 a first antenna for detecting said first signal;
5 a first receiver for receiving said first signal;
6 a microprocessor for determining the position of the game ball in response to said first
7 signal; and
8 means for recording said position.
- 1 18. The system of Claim 17 further comprising means for communicating the game ball's
2 position to a game official.

1 19. The system of Claim 18 wherein said means for communicating the game ball's
2 position comprises:

3 a second transmitter for transmitting a second signal, said second signal containing
4 the game ball's position; and
5 display means for graphically displaying the game ball's position contained in said
6 second signal.

1 20. The system of Claim 17 further comprising control means for selectively directing
2 said microprocessor to record the game ball's position for a specific point in time.

1 21. The system of Claim 20 wherein said control means comprises a transmitter that is
2 selectively operable to send a control signal to said microprocessor and wherein said
3 microprocessor is programmed to record the game ball's position at the time said transmitter
4 sends said control signal.

1 22. The system of Claim 17 further comprising:
2 said microprocessor comprising a first clock for associating first time information
3 with said position;
4 a second transmitter for transmitting a second signal that contains said position;
5 a display/receiver comprising a second clock for providing second time information;
6 means for synchronizing said second clock with said first clock;
7 means for selectively recording said second time information;
8 means for communicating a third signal to said microprocessor, said third signal
9 containing said second time information; and
10 wherein said second transmitter transmits said second signal in response to said third
11 signal.

1 23. Apparatus for determining the position of a game ball on a playing surface during an
2 athletic competition, comprising:
3 a first transmitter located in the uniform of a player carrying the game ball, for
4 transmitting a first signal;
5 a first antenna for detecting said first signal;
6 a first receiver for receiving said first signal; and
7 a microprocessor for determining the position of the game ball in response to said first
8 signal.

1 24. A football for use with a system for determining the position of a game ball on a
2 playing surface during an athletic competition, said football including a transmitter mounted
3 therein for sending a signal for being triangulated by a computer that stores and records
4 position information for said football.

1 25. A display/receiver for use with a system for determining the position of a game ball
2 on a playing surface during an athletic competition, said display/receiver comprising:
3 a receiver for receiving a signal, said signal modulated to convey the game ball's
4 location;
5 a microprocessor for interpreting the game ball's location modulated in said signal;
6 and
7 means for communicating the game ball's location to a game official.

1 26. The display/receiver of claim 25 wherein said means for communicating the game
2 ball's location communicates said location visually.

1 27. The display/receiver of claim 25 wherein said means for communicating the game
2 ball's location communicates said location audibly.